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5: The hottest places in hell

Brigit Fokkinga, Stephan Raaijmakers, Hubert Korzilius

“The hottest places in hell are reserved for those who, in times of great moral crisis, maintain their neutrality” (Dante Alighieri).



Introduction

As Group Model Building (GMB) facilitators we were asked to present the outcomes of a GMB project, at a national conference on livability in neighborhoods. This conference for practitioners was organized by our client, a regional welfare and care organization. We presented the causal loop diagram of the causes and effects of livability in a neighborhood as constructed from the perspectives of stakeholders involved in the neighborhood. The conference audience apparently encountered the same kind of problems of livability in their neighborhoods and several organizations wanted to use the model and our expertise for addressing their problem situations. We explained that the model was specific to the local circumstances and to the group of stakeholders that were involved in the process of building the model, but had limited external validity. As such the model would not be generalizable and one-to-one transferrable to other situations. The model in itself was not just a product or a tool but an aid to a problem structuring process in which stakeholders constructed a shared vision of the complex problem they were faced with, to enhance the likelihood of concerted action. We also explained that we were not experts but that our role as facilitators was primarily neutral and procedural, in supporting stakeholders in a joint process of eliciting knowledge in building a model. This ended the discussion at the conference, but it did not end for us. We were faced with a dilemma, that appears to occur more often in our practice. In our research group we have carried out multiple GMB projects in the fields of housing, livability and safety in neighborhoods and on women in academic positions. In conducting several GMB projects in the same field the facilitator gains expertise, whether she wants it or not. This knowledge is partly explicit, like in the process of shaping a group model, and partly

tacit, or implicit (Polanyi, 1958). Implicit knowledge cannot adequately be articulated in verbal terms, but nevertheless influences the way a facilitator will lead the group process.

Vennix (1996, p. 150) formulates a fundamental idea to GMB practices about *neutrality*: the less a facilitator knows about the problem at stake the lower the chance the facilitator will influence the content of the discussion. Therefore, the criterion of neutrality means that the facilitator favors no specific perspective and abstains herself from a substantive contribution to the discussion. The facilitator guides and supports an argumentative setting directed at an adequate representation of the problem situation based on the knowledge of the participating stakeholders. However, even in settings that come close to Habermas' (1981) ideal speech situation (herrschaftsfreier Dialog), in which participants are free of non-rational, coercive influences, distortions in representation (biases) might occur. Also, in retrieving and processing of information human beings use so called heuristics (Tversky & Kahneman, 1973, 1974). Heuristics are mental shortcuts, simple thinking procedures that support the finding of answers to questions. These procedures can be adequate and very efficient, but in complex situations they may lead to biases in the understanding of the problem situation, from the perspective of the client but also from the perspective of the facilitator.

In this paper we aim to contribute to the academic debate initiated by Jac Vennix on the role of facilitators in group model building projects. More specifically, we will reflect on possible biases and heuristics in situations where facilitators have content expertise. Our research question is: What is the effect of using facilitators' content expertise on the facilitators' neutrality in the group model building process? To answer this question we will use literature from various theoretical perspectives. First, we will discuss facilitator roles in interventions (Schein, 1987). Next, we will present a typology of complex problems, that distinguishes between dynamic and behavioral complexity (Roth & Senge, 1996) and will confront the type of problem with the role of the facilitator. Then, we will describe relevant biases and heuristics and show their implications for the client and for the neutrality of the facilitator when a generic model is demanded by the client. We end with a conclusion and discuss some practical implications.

Facilitators' roles in interventions

Vennix (1996) elaborates Schein's (1987) concept of process consultation into a set of attitudes for facilitating GMB processes, with neutrality as a key concept. Process consultation is focused on the principle of building a helping relationship towards the client.

The process consultant does not sell a solution but helps the client to help herself in solving the problem, based on the assumption that only the client can decide what is helpful. Problem ownership remains with the client and is not taken over by the process consultant. At the start of the relationship the process consultant should be open-minded and process-oriented by default, in order to structure the problem situation together with the client: “necessary at the beginning of any helping process because it is the only mode that will reveal what is really going on and what kind of help is needed” (Schein, 1999, p. 10). According to Schein, after the initial phase of making sense of the problem, three situations can occur:

- a. If neither the problem nor the solution is clear, then the consultant and the client perform a joint diagnosis. The consultant operates in a process consultation role.
- b. If the problem is clear but the solution is not, Schein advises the doctor-patient mode. The client lists the symptoms and the consultant diagnoses the ‘disease’ and offers a ‘cure’, this cure can be a program, a protocol or a step-by-step-plan to solve the problem.
- c. If the client and the process consultant have a clear view on the problem definition and on a suggested solution, the role of the consultant shifts towards an expert role. The expert can deliver a service or a competence, for instance by conducting a survey.

Table 1 gives an overview of the appropriateness of the different roles of the consultant in varying problem situations.

Table 1. *Roles in interventions, adapted from Schein (1999)*

<div> <div>Problem situation</div> <div>Role of the consultant</div> </div>	Building a helping relationship with the client (default)	
	Is the problem clear?	Is the solution clear?
Process consultant	No	No
Doctor	Yes	No
Expert	Yes	Yes

In the Process Consultation role, an attitude of active inquiry and neutrality is essential for the consultant. In the following section we will introduce a typology of complex problems to open up the problem-space (Roth & Senge, 1996) and to confront the types of problems with the roles differentiated by Schein.

Complex problems: a typology

In general, a problem is defined as the discrepancy between the actual and desired situation (Vennix, 2011). Systems thinkers see problems as parts of a bigger system, where an interconnected set of variables is characterized by feedback mechanisms and can become ‘messy’. In their systems thinking approach Roth and Senge (1996) developed a typology of complex problems that organizations may encounter during a change process. This approach is embedded in organizational learning theories like action research (e.g., Argyris & Schon, 1978; Checkland, 2000) and dialogue theory (Isaacs, 1993), assuming that developing practical knowledge in organizations is realized by means of exchange of ideas through “action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people” (Reason & Bradbury, 2001, in Brydon-Miller, Greenwood, & Maguire, 2003, pp. 10-11). In their typology, Roth and Senge (1996) differentiate between two dimensions of complexity: dynamic and behavioral complexity, in order to specify the more general concept of messy problems. These dimensions represent problem aspects that organizations have to cope with when dealing with long-term processes and changes involving multifaceted issues and the interests of many actors. Dynamic complexity embodies physical aspects of problems and “characterizes the extent to which the relationship between cause and resulting effects are distant in time and space” (Roth & Senge, 1996, p. 94). Behavioral complexity represents the social aspects of problems and “characterizes the extent to which there is diversity in the aspirations, mental models, and values of decision makers” (Roth & Senge, 1996, p. 93). By combining the two dimensions a typology of four problem types emerges (see Table 2).

Table 2. *A typology of complex problems, adapted from Roth and Senge (1996, p. 93)*

Behavioral Complexity \ Dynamic complexity	Low	High
	Low	High
Low	Tame problems	Messes
High	Wicked problems	Wicked messes

The typology in Table 2 enables the diagnosis of the kind of problems organizations encounter and may set the stage for designing actions to solve them. The horizontal axis represents the dynamic complexity, the vertical axis the behavioral complexity of these problems.

When both dynamic and behavioral complexity are low, organizations deal with *tame problems*, meaning that there are no complex dynamic interrelations between the various components and that the different stakeholders have a shared view on the problem. Tame problems can relatively easily be solved, in isolation, by static rather than dynamic analysis tools (Roth & Senge, 1996, p.94).

Messes are characterized by high dynamic and low behavioral complexity. Problems have multiple interconnected causes and are manifested in manifold ways but actors involved have a shared view.

Wicked problems exist when dynamic complexity is low and behavioral complexity is high. In terms of content wicked problems are rather straightforward, the relationship between the various components is relatively static, not involving intricate dynamic structures. However, the different actors involved have different perspectives on the problem and also have some kind of discussion about it. The problem is clear but in choosing the right solution these perspectives should be taken into account.

Wicked messes are defined by high dynamic and high behavioral complexity. This type of problems go way back in time. Decision makers have tried to solve them on numerous occasions but without positive results. In taking action against these problems, they repeatedly overlooked the long-term consequences and misinterpreted them as external dangers threatening the organization. As a consequence, in the case of wicked messes, this proactive attitude of the management team all too often is 'reactiveness in disguise'. By fighting 'the enemy out there' we, more often than not, react to the consequences of actions initiated by ourselves in the distant past (Senge, 1990, pp. 19-21). Furthermore, the matter is complicated by the fact that many actors have a stake in the problem but do not have a shared vision on it. To address this multifaceted kind of problems, GMB as a problem structuring method, is designed to cope with both dynamic and behavioral complexity (Vennix, 1996).

Although the problem typology discussed gives insight into the background and consequences of a problem, the typology in itself is not absolute but should always be applied

from the perspective of the client. The meaning of the problem depends on the context and history of the problem and the experiences of those involved in understanding the problem. For instance, if the client has had experiences of a problem being coupled with misunderstanding, disputes and even quarrels between actors, from this perspective the problem may be regarded as a wicked mess.

By confronting the typology above with Schein's consultancy roles, we may conclude that a client with a tame problem does not need a process consultant. The client can solve the problem alone or hire an expert. For instance, if more information is needed the client can hire a researcher, or if a team does not work together the client can hire a trainer. Messes require a 'doctor' to diagnose the causes of the symptoms and to advise a cure to the problem; for instance, a system dynamics (SD) modeler can build a formal SD model of the causal structure of the problem, and by running simulations a possible cure will emerge. Wicked problems need an expert on facilitating social issues, for instance a conflict negotiator. Finally, in wicked messes a thorough diagnosis of the problem is needed that involves all stakeholders to foster concerted action. The consultant operates in the process-consultation mode. In GMB we refer to this role as facilitator.

Our research question is directed at situations in which a facilitator has gained knowledge on the problem and is approached as such by a client. In this situation the facilitator is expected to adopt an expert role. This focus on expertise may lead to a premature reduction of a complex problem to a more or less tame problem in the first contact of the client and the facilitator. A thorough diagnosis on the type of problem is passed over in this situation and generates a tunnel vision focused on solutions. Here the risk of an error of the third kind (Dunn, 2014; Mitroff & Featheringham, 1974) emerges: solving the wrong problem. An example of this error is the building of an office block while there is no need for more office space.

It gets even more complicated if a client demands a model from another GMB project. In this situation the consultant ignores the behavioral complexity and reduces the dynamic complexity to a premature generalization of a perceived generic model that may not fit the specific complex problem of the client. But the client may not be aware of this and favors the product over the process. In this situation biases and heuristics may lead to severe distortions on the perception of the problem. The case we described at the beginning of the introduction is an example of such a situation: several organizations wanted to use an existing GMB model

for addressing their specific problem situations. In the following, we will describe three biases and heuristics we deem relevant to understand the consequences of this situation.

Biases and heuristics and GMB

Regarding the processing of information by human beings, Kahneman (2003) differentiates System 1 and System 2. In this respect, Kahneman (2011) refers to ‘thinking fast and slow’, where thinking fast (System 1) is automatic problem solving and thinking slow (System 2) deliberate analysis and reflection on problem situations. In daily life, System 1 is active and delivers fast answers to the problems we are faced with. It uses simple mental procedures (heuristics) and can be adequate and very efficient, but in complex situations it may lead to distortions (biases) in the understanding of the problem situation. We discuss three biases and heuristics we consider relevant to a situation where a client demands a perceived generic model: the bias of preference for coherence over completeness, the hindsight bias, and the availability heuristic.

Preference for coherence over completeness: Finding connections is easier with relatively less information than with a lot of data. “It is the consistency of the information that matters for a good story, not its completeness. Indeed, you will often find that knowing little makes it easier to fit everything you know into a coherent pattern” (Kahneman, 2011, p. 87).

Hindsight bias (Christensen-Szalanski & Willham, 1991). Recent events and information affect how someone looks back at the past. After an event has occurred people tend to see the event as having been predictable: the I-knew-it-all-along effect. When asking participants what they have learned in a session they tend to say they hardly learned anything new. “Once you adopt a new view of the world (or any part of it), you immediately lose much of your ability to recall what you used to believe before your mind changed” (Kahneman, 2011, p. 202).

Availability heuristic: This heuristic refers to the mechanism that when “you wish to estimate the size of a category or the frequency of an event, [...] you report an impression of the ease with which instances come to mind” (Kahneman, 2011, p. 130). Retrieval from memory favors exceptional and dramatic events and personal experiences over facts and images over words. Also, we tend to value situations we hardly remember as less important which may lead to systematic underestimation of information that may be crucial in dealing with the problem situation (Sternman, 2000, p. 600).

The bias of preference for coherence over completeness translated to GMB: If the client asks for knowledge as a generic model this appeals very direct and strongly to System 1. The generic model shows consistency and may look exhaustive from the perspective of individual participants. If the facilitator is asked for expert-knowledge the tendency towards premature closure (Kruglanski & Webster, 1996) is high. Participants are likely to accept the model as an adequate representation of the problem situation, and suspend further inquiry. Relying on the expertise of the facilitator, they assume that the model contains all relevant variables, and therefore the trigger for a check on completeness is pretty well absent. Kahneman (2011, p. 212) gives an example of his test on the ‘leaderless Group challenge’ of the Israeli army: “Having observed one hour of a soldier’s behavior in an artificial situation, we felt we knew how well he would face the challenges of officer training and challenges in combat”. A coherent pattern of action strategies deduced from a constrained observation was incorrectly assumed to be applicable to the harshness and complexity of real combat situations. On a less dramatic level, a generic model as a starting point in the process of model building could have a similar effect. The model offers the participants a coherent pattern of apparently important variables and relations. Variables, though related to the problem situation but not in the model, run the risk to be excluded from the outset.

The inquiring attitude of the participants is further endangered by the hindsight bias and availability heuristic. Once the model is accepted as a valid representation of the problem situation, it becomes part of the stock of knowledge of the participants. This internalization triggers the hindsight bias; it hinders the reconstruction of past states of knowledge on the subject matter. While the preference of coherence over completeness leads to omissions in the observation, the hindsight bias incites deletions in the recollection of problem information. As a consequence, relevant knowledge about characteristics and relations specific for the problem situation might get lost. And when one nevertheless tries to get information back that is retrieved in memory, the availability of the generic model distorts the problem representation by the ease with which its variables and relations come to mind.

These cognitive errors induce incomplete use of the information needed for understanding the problem situation, for the client as well as the facilitator. On the level of dynamic complexity: a generic model fosters the bias of preference for coherence over completeness, which leads to a neglect of validating the model and its elements for the specific situation. In-depth understanding is sacrificed for the reason of coherence. It also decreases the attitude of inquiry needed to discover the complexity of the problem situation of the client. On the level

of behavioral complexity: A generic model as a starting point in the process of model building may induce an illusion of skill and authority of the facilitator, which also decreases an inquiring attitude of participants. It moves the 'Herrschaftsfreier Dialog' (Habermas, 1981) towards a more hierarchical relationship between facilitator and participants. The role of stakeholders is diminished which decreases their commitment and trust, and subsequently their team learning.

Conclusion

We wanted to know what the implications are for a client and for a facilitator, when expertise or a model from another project is present or explicitly used for a complex problem situation. We used three theoretical perspectives to research this question. According to Schein (1999), at the start of any helping process the consultant should be open-minded and process-oriented by default, in order to structure the problem situation together with the client, because this is the only mode that will reveal what is really going on. In this mode of process consultancy an attitude of active inquiry and neutrality is essential for the consultant. Following a joint diagnosis of the problem situation by the client and the facilitator, the type of problem is assessed which determines the role of the facilitator in the intervention.

On the basis of Roth and Senge's (1996) work we presented a typology of complex problems by combining two dimensions: dynamic complexity and behavioral complexity. Wicked messes contain a high level of both and behavioral complexity. As a problem structuring method, GMB is specifically tailored to address wicked messes. By confronting Schein with Roth and Senge we showed that if the facilitator is addressed as an expert this focus on expertise may lead to a premature reduction of a complex problem to a more or less tame problem, without a thorough diagnosis on the type of problem and the risk of solving the wrong problem. Moreover, if a client demands the use of a model from another GMB project to understand their current problem, the behavioral complexity is ignored and the dynamic complexity may be reduced to a premature generalization of a perceived generic model that may not fit the specific complex problem of the client. But the client may not be aware of this and favors the product over the process. In this situation biases and heuristics may lead to severe distortions on the perception of the problem by the client and threatens the neutrality of the facilitator. These cognitive errors induce incomplete use of the information needed for understanding the problem situation, for the client as well as the facilitator. On the level of dynamic complexity: a generic model fosters the bias of preference for coherence over

completeness, which leads to a neglect of validating the model and its elements for the specific situation. It also decreases the attitude of inquiry needed to discover the complexity of the problem situation of the client. On the level of behavioral complexity: a generic model moves the 'Herrschaftsfreier Dialog' towards a more hierarchical relationship between facilitator and participants. The role of stakeholders is diminished which decreases their commitment and trust, and subsequently their team learning. Also, the ownership of the problem might shift from the client to the facilitator which may cause lower commitment to the proposed solutions. The facilitator as an expert risks to lose her neutral attitude and might go into defensive behavior (Vennix, 1996, p. 113) or might incline towards a teaching attitude. Ergo, deviation from a process consultancy mode at the beginning of the relationship should be avoided. By maintaining a neutral attitude the risk of premature closure and generalization can be prevented.

However, there may be situations in a GMB process where the facilitator has exclusive expertise that does not come up from the group and is seen as fundamental by the facilitator. In this situation, Vennix' (1996) advice is that the facilitator makes this explicit by temporarily switching roles from facilitator to expert and consequently let the group decide what to do with this information. Another solution is to ask an outsider to perform the role of expert. In GMB projects on the role of women in academic positions this last solution is used (Bleijenbergh & Van Engen, 2015). In these projects information from similar projects with other clients is used, but only after a specific model is established within the group. This opens up an analysis of similarities and differences between clients which serves as benchmarking. On the issue of using a generic model the System Dynamics literature gives a well-known example of a model that is used as a product instead of a process: URBAN1. Based on Forrester's Urban Dynamics study (1969), Alfeld and Graham (1976) developed URBAN1 as a small and simplified stocks and flows model showing the dynamic structure underlying growth, stagnation and decay of a city neighborhood. The assumption of URBAN1 is that the structure is generic to every city neighborhood in the world (Alfeld, 1995). Ghaffarzadegan, Lyneis, and Richardson (2010) review URBAN1 to illustrate the usefulness of small SD models in policy making and conclude that these models help in teaching policy makers in feedback thinking.



Gustave Doré - Dante Alighieri – Inferno – Plate 8⁹

Dante Alighieri 's statement “The hottest places in hell”, was meant to indicate that the neutrals, those who in this world never take a side, occupy the mouth and vestibule of hell. In times of great moral crisis, as probably the current time, maintaining neutrality is unwanted and people need to take a side. However, in case of facilitators’ neutrality in GMB projects, we have tried to cool this off and reflected on relevant biases and heuristics that may affect modelling when a facilitator is not, whether consciously or unconsciously, neutral as well as on several solutions to this dilemma. In our efforts we are very much indebted to Jac Vennix, one of the founding fathers of GMB and outstanding leader of the Research and Intervention Methodology section of Management Sciences at Radboud University.

⁹ Gustave Dore, ca. 1861. Found at April 5 2016 at [https://commons.wikimedia.org/wiki/File:Gustave_Dor%C3%A9_-_Dante_Alighieri_-_Inferno_-_Plate_8_\(Canto_III_-_Abandon_all_hope_who_enter_here\).jpg](https://commons.wikimedia.org/wiki/File:Gustave_Dor%C3%A9_-_Dante_Alighieri_-_Inferno_-_Plate_8_(Canto_III_-_Abandon_all_hope_who_enter_here).jpg)

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